CLAIMS

1. A region defined in relation to a surface, coded data being disposed within the region, wherein the coded data includes identity data for identifying the region.

2. A region according to claim 1, wherein the coded data takes the form of at least one tag.

3. A region according to claim 2, wherein the tags substantially fill the region.

4. A region according to claim 3, wherein the tags within each region are identical to each other, but are distinct from tags in a plurality of other regions on the surface of on other surfaces for which other regions are defined.

5. A region according to claim 2, wherein the tags within each region are positioned stochastically within that region.

6. A region according to claim 2, wherein the tags within each region are positioned in a regular array.

7. A region according to claim 2, wherein the tags within each region are substantially uniformly distributed within that region.

8. A region according to claim 2, wherein the tags are disposed on the surface such that the relative spacing of their centres is less than about 12mm.

9. A region according to claim 8, wherein the relative spacing is less than about

3mm.

10. A region according to claim 9, wherein the relative spacing is less about 1mm.

11. A region according to claim 9, wherein the region is defined as the entire surface.

12. A region according to claim 2, wherein the surface is defined by a substrate.

13. A region according to claim 12, wherein the substrate is laminar.

14. A region according to claim 2, wherein the tags are disposed at predetermined positions on the surface.

15. A region according to claim 14, wherein the tags are disposed on the surface within a tessellated pattern comprising a plurality of tiles, each of the tiles containing a plurality of the tags.

16. A region according to claim 15, wherein the tiles interlock with each other to substantially cover the surface.

17. A region according to claim 16, wherein the tiles are all of a similar shape.

18. A region according to claim 17, wherein the tiles are triangular, square, rectangular or hexagonal.

19. A region according to claim 15, wherein the tags are disposed stochastically

within each of the tiles.

20. A region according to claim 1, wherein the region is identified with sufficient precision to distinguish the region from 1.5×10^{14} other regions.

21. A region according to claim 2, wherein each of the tags includes at least one common feature in addition to the identity data.

22. A region according to claim 21, wherein the at least one common feature is configured to assist finding and/or recognition of the tags by associated tag reading apparatus.

23. A region according to claim 21, wherein the at least one common feature is represented in a format incorporating redundancy of information.

24. A region according to claim 23, wherein the at least one common feature is rotationally symmetric so as to be rotationally invariant.

25. A region according to claim 23, wherein the at least one common feature is ring-shaped.

26. A region according to claim 2, wherein each of the tags includes at least one orientation feature for enabling a rotational orientation of the tag being read to be ascertained.

27. A region according to claim 26, wherein the at least one orientation feature is represented in a format incorporating redundancy of information.

28. A region according to claim 27, wherein the at least one orientation feature is rotationally asymmetric.

29. A region according to claim 27, wherein the at least one orientation feature is skewed along its major axis.

30. A region according to claim 2, wherein each of the tags includes at least one perspective feature for enabling a perspective distortion of the tag being read to be ascertained.

31. A region according to claim 30, wherein the at least one perspective feature includes at least four sub-features which are not coincident.

32. A region according to claim 2, wherein each tag includes a plurality of tag elements, the identity data being defined by a plurality of the elements.

33. A region according to claim 32, wherein the tag elements are disposed in at least one arcuate band around a central region of each tag.

34. A region according to claim 33, wherein there are a plurality of the arcuate bands disposed concentrically with respect to each other.

35. A region according to claim 34, wherein each element takes the form of a dot having a plurality of possible values.

36. A region according to claim 35, wherein the number of possible values is two.

37. A region according to claim 35, wherein when representing one of the possible values, the tag elements absorb, reflect or fluoresce electromagnetic radiation of a predetermined wavelength or range of wavelengths to a predetermined greater or lesser extent than the surface.

38. A region according to claim 35, wherein the possible values of the tag elements are defined by different relative absorption, reflection or fluorescence of electromagnetic radiation of a predetermined wavelength or range of wavelengths.

39. A region according to claim 35, wherein the tags are not substantially visible to an average unaided human eye under daylight or ambient lighting conditions.

40. A region according to claim 35, wherein the tags are slightly visible to an average unaided human eye under daylight or ambient lighting conditions.

41. A region according to claim 32, wherein the tags are visible to an average unaided human eye under daylight or ambient lighting conditions.

42. A region according to claim 1, wherein the identity data is represented in a format incorporating redundancy of information.

43. A region according to claim 2, wherein the tags are printed onto the surface by means of a printer.

44. A region according to claim 43, wherein the printer is an ink printer.

45. A region according to claim 44, wherein the tags are printed using ink that is absorbent or reflective in the ultraviolet spectrum or the infrared spectrum.

46. A region according to claim 43, wherein the printer also prints additional information onto the surface.

47. A region according to claim 46, wherein the additional information is printed onto the surface using colored or monochrome inks.

48. A region according to claim 47, wherein the additional information is printed onto the surface using one of the following combinations of colored inks:

CMY;

CMYK;

CMYRGB; and

spot colour.

49. A region according to claim 2, wherein at least a plurality of the tags are disposed stochastically upon the surface.

50. A region according to claim 49, wherein the identity data of each of the tags includes position data indicating the tag's position in relation to either the surface or a plurality of the other tags.

51. A region according to claim 50, wherein the tags are disposed in a regular array on the surface.

52. A region according to claim 51, wherein the array is triangular.

53. A region according to claim 52, wherein the tags are tiled over the surface

54. A region according to claim 53, wherein the array is rectangular.

55. A region according to claim 54, wherein the tags are tiled over the surface.

56. A region according to claim 2, further including additional non-tag information disposed on the surface.

57. A region according to claim 1, wherein any 10 millimetre diameter subregion of the region includes sufficient coded data to identify the region.

58. A region according to claim 58, wherein any 10 millimetre diameter subregion of the region includes sufficient information to identify at least one point of the region.

59. A surface, including a region according to any one of the preceding claims.

60. A method of producing a surface having a region, the method including the steps of:

(a) defining coded data, the coded data being indicative of:

a region identity associated with the region; and

a plurality of points within the region;

(b) disposing the coded data within a region on the surface.

61. A method according to claim 60, wherein the region is identified with sufficient precision to distinguish the region from 1.5×10^{14} other regions.

62. A method according to claim 60, wherein the coded data includes at least one tag, each tag being indicative of the region identity and the position of the tag within the region.

63. A method according to claim 60, including the step of providing a substrate defining the surface.

64. A method according to claim 60, wherein the substrate is laminar.

65. A method according to claim 62, wherein step (b) includes the sub-step (b)(i) of disposing the tags in a regular array within the region.

66. A method according to claim 65, wherein the sub-step (b)(i) includes the sub-step of disposing the tags in a rectangular array within the region.

67. A method according to claim 65, wherein the sub-step (b)(i) includes the sub-step of disposing the tags in a triangular array within the region.

68. A method according to claim 65, wherein step (b)(i) includes the sub-step of tiling the tags over the region.

69. A method according to claim 62, further including the step of adding a common feature to the tags in addition to the identity data.

70. A method according to claim 69, wherein the common feature is configured to assist location and/or recognition of the tags by associated tag reading apparatus.

71. A method according to claim 70, wherein the common features are represented in a format incorporating redundancy of information.

72. A method according to claim 62, further including the step of providing each of the tags with at least one orientation feature for enabling an orientation of the tag being read to be ascertained.

73. A method according to claim 72, wherein the at least one orientation feature is represented in a format incorporating redundancy of information.

74. A method according to claim 62, wherein each tag includes a plurality of tag elements, the identity data being defined by a plurality of the elements.

75. A method according to claim 62, wherein step (b) includes the sub-step of disposing the tags on the surface such that the relative spacing of their centres is less than about 12mm.

76. A method according to claim 75, wherein the relative spacing is less than about 3mm.

77. A method according to claim 75, wherein the relative spacing is less about 1mm.

78. A method according to claim 62, wherein the tags are positioned stochastically within the region.

79. A method according to claim 62, wherein the tags substantially uniformly distributed within the region.

80. A method according to claim 60, wherein the region is defined as the entire surface.

81. A method according to claim 62, wherein the tags are disposed at predetermined positions on the surface.

82. A method according to claim 62, wherein each of the tags includes at least one common feature in addition to the identity data.

83. A method according to claim 82, wherein the at least one common feature is configured to assist finding and/or recognition of the tags by associated tag reading apparatus.

84. A method according to claim 82, wherein the at least one common feature is represented in a format incorporating redundancy of information.

85. A method according to claim 82, wherein the at least one common feature is rotationally symmetric so as to be rotationally invariant.

86. A method according to claim 82, wherein the at least one common feature is ring-shaped.

87. A method according to claim 62, wherein each of the tags includes at least one orientation feature for enabling a rotational orientation of the tag being read to be ascertained.

88. A method according to claim 87, wherein the at least one orientation feature is represented in a format incorporating redundancy of information.

89. A method according to claim 88, wherein the at least one orientation feature is rotationally asymmetric.

90. A method according to claim 88, wherein the at least one orientation feature is skewed along its major axis.

91. A method according to claim 62, wherein each of the tags includes at least one perspective feature for enabling a perspective distortion of the tag being read to be ascertained.

92. A method according to claim 91, wherein the at least one perspective feature includes at least four sub-features which are not coincident.

93. A method according to claim 62, wherein each tag includes a plurality of tag elements, the identity data being defined by a plurality of the elements.

94. A method according to claim 93, wherein the tag elements are disposed in at least one arcuate band around a central region of each tag.

95. A method according to claim 94, wherein there are a plurality of the arcuate bands disposed concentrically with respect to each other.

96. A method according to claim 95, wherein each element takes the form of a dot

having a plurality of possible values.

97. A method according to claim 96, wherein the number of possible values is two.

98. A method according to claim 96, wherein when representing one of the possible values, the tag elements absorb, reflect or fluoresce electromagnetic radiation of a predetermined wavelength or range of wavelengths to a predetermined greater or lesser extent than the surface.

99. A method according to claim 96, wherein the possible values of the tag elements are defined by different relative absorption, reflection or fluorescence of electromagnetic radiation of a predetermined wavelength or range of wavelengths.

100. A method according to claim 96, wherein the tags are not substantially visible to an average unaided human eye under daylight or ambient lighting conditions.

101. A method according to claim 96 wherein the tags are slightly visible to an average unaided human eye under daylight or ambient lighting conditions.

102. A method according to claim 96, wherein the tags are visible to an average unaided human eye under daylight or ambient lighting conditions.

103. A method according to claim 60, wherein the region identity is represented in a format incorporating redundancy of information.

104. A method according to claim 62, wherein the tags are printed onto the surface by means of a printer.

105. A method according to claim 104, wherein the printer is an ink printer.

106. A method according to claim 105, wherein the tags are printed using ink that is absorbent or reflective in the ultraviolet spectrum or the infrared spectrum.

107. A method according to claim 104, wherein the printer also prints additional information onto the surface.

108. A method according to claim 107, wherein the additional information is printed onto the surface using colored or monochrome inks.

109. A method according to claim 108, wherein the additional information is printed onto the surface using one of the following combinations of colored inks:

CMY;

CMYK;

CMYRGB; and

spot colour.

110. A method according to claim 60 wherein any 10 millimetre diameter subregion of the region includes sufficient coded data to identify the region.

111. A method according to claim 110, wherein any 10 millimetre diameter subregion of the region includes sufficient information to identify at least one point of the region.

112. A region according to any one of claims 1 to 6, 35, 38 to 43, 55 to 64 or 67,

wherein the coded data is machine readable, and the information represented by the coded data is substantially inscrutable to an unaided human.

113. A method according to any one of claims 82 to 88, 93 or 96 to 99, wherein the coded data is machine readable, and the information represented by the coded data is substantially inscrutable to an unaided human.